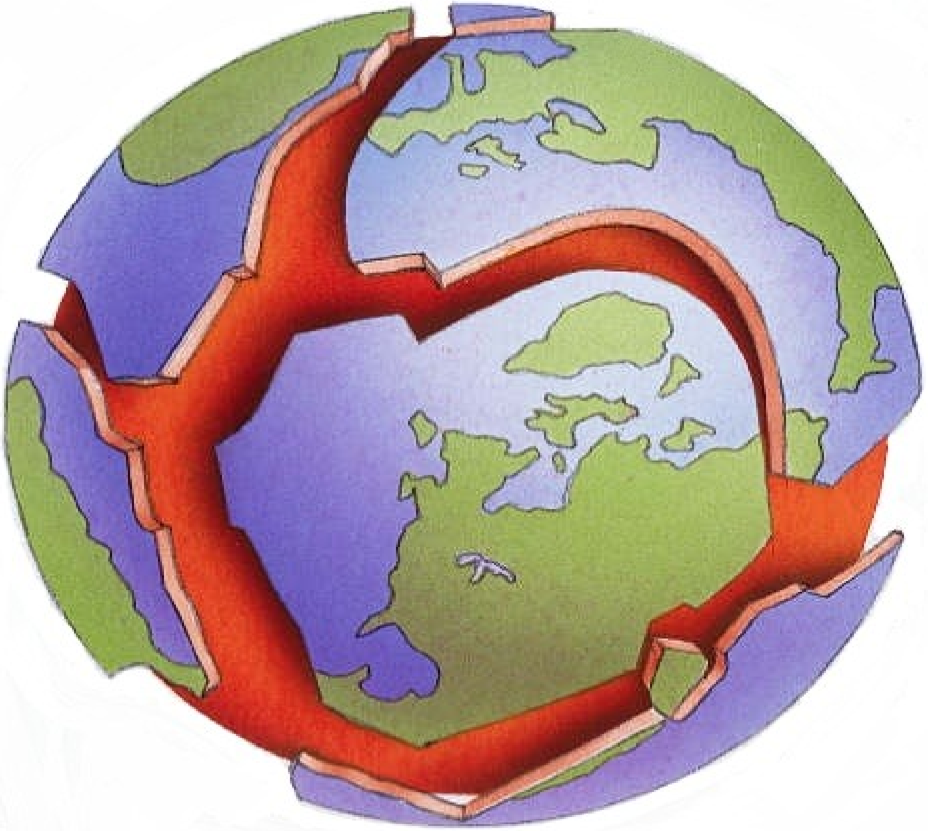


Tectonic Plate Boundaries (Divergent boundary)

What is Plat Tectonics?

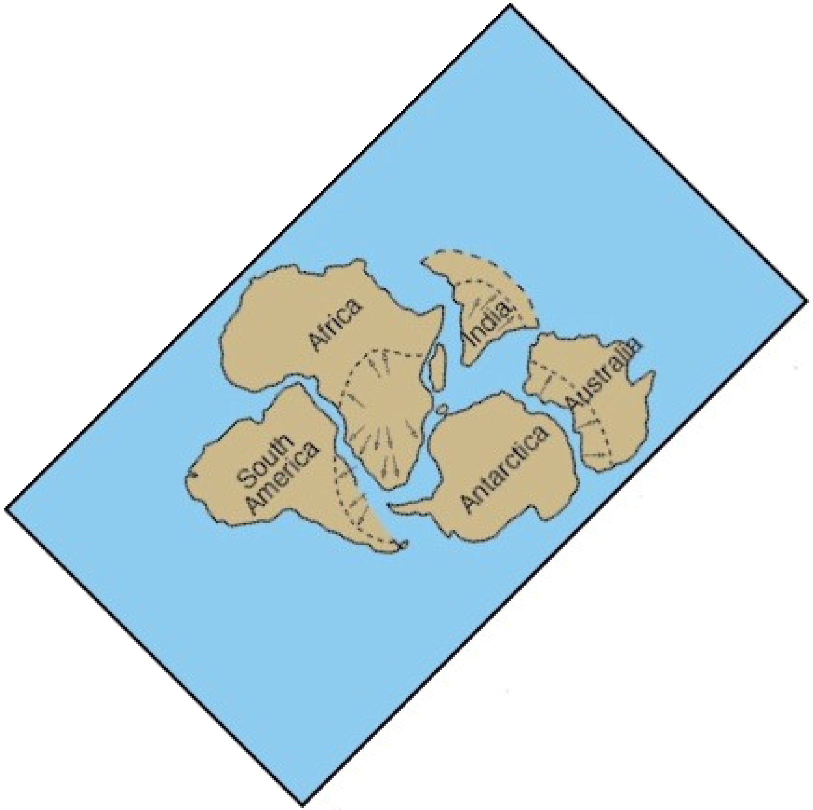
- Greek – “tektonikos” of a builder
- Pieces of the lithosphere that move around
- Each plate has a name
- Fit together like jigsaw puzzles
- Float on top of mantle

Continental Drift

Alfred Wegener in 1912 proposed the theory that the crustal plates are moving over the mantle.

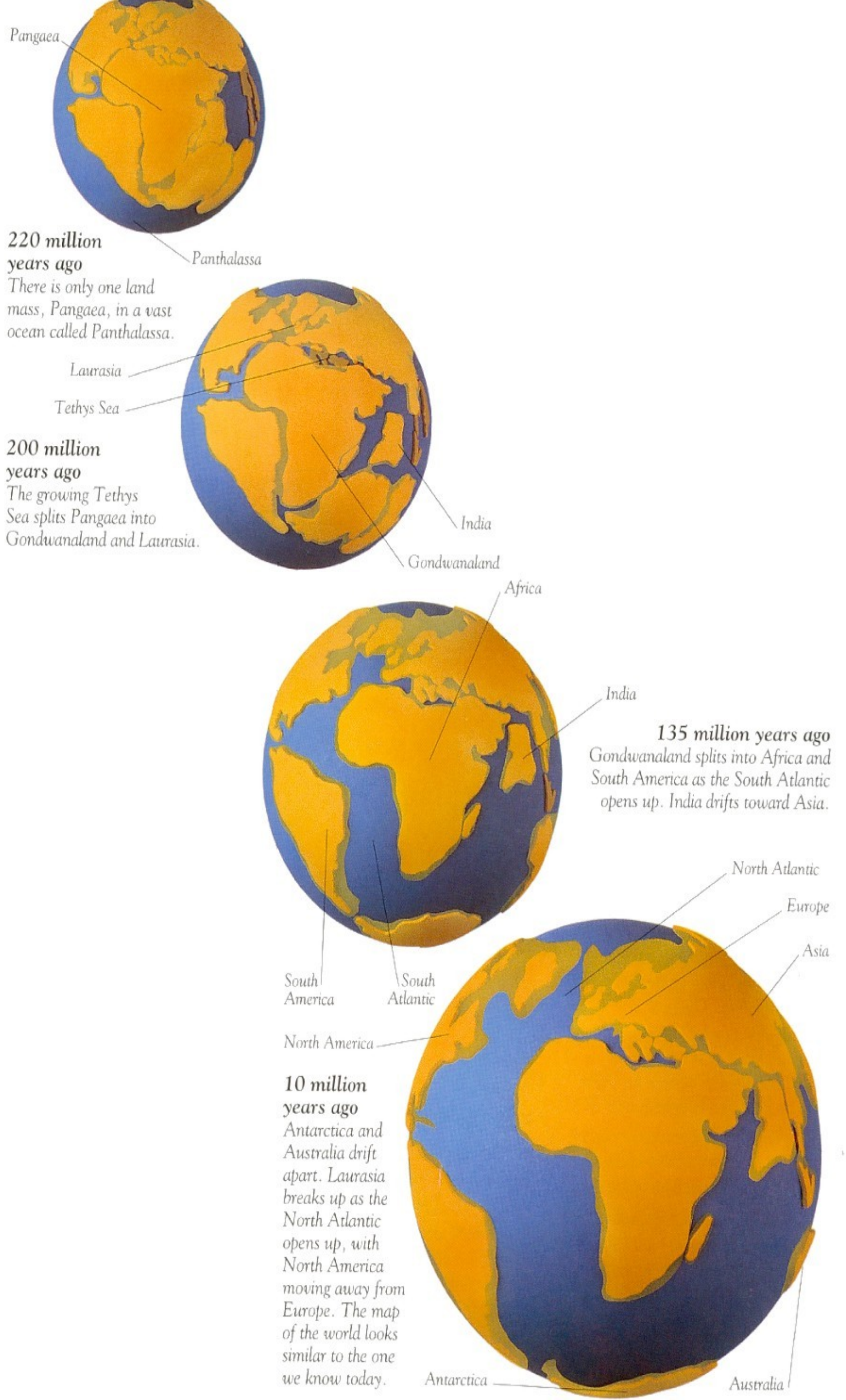
This was supported by:

- Fossil
- Rock type evidence
- living evidence



Continental Dri

The continents have slowly drifted across the surface of the Earth over millions of years.



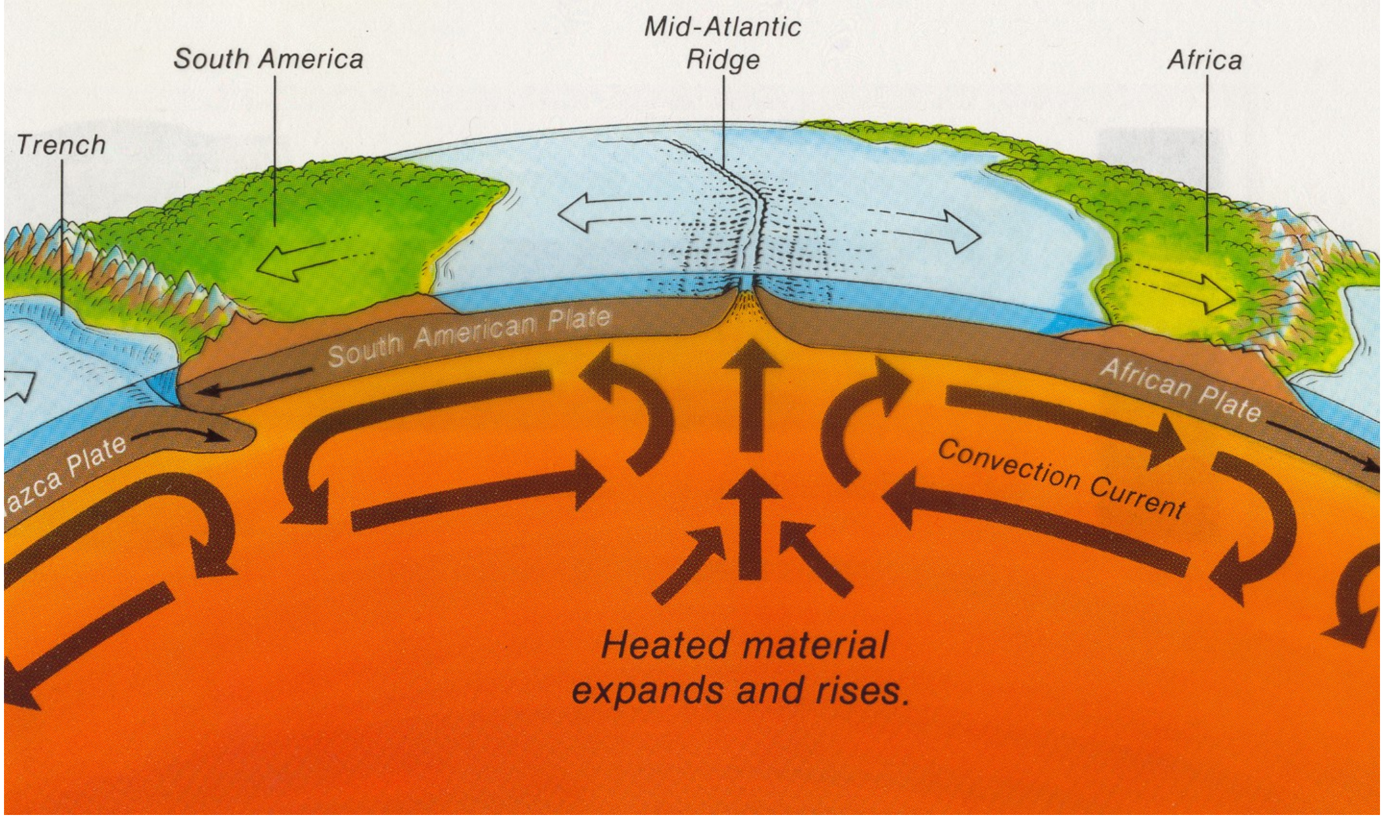
220 million years ago
There is only one land mass, Pangaea, in a vast ocean called Panthalassa.

200 million years ago
The growing Tethys Sea splits Pangaea into Gondwanaland and Laurasia.

135 million years ago
Gondwanaland splits into Africa and South America as the South Atlantic opens up. India drifts toward Asia.

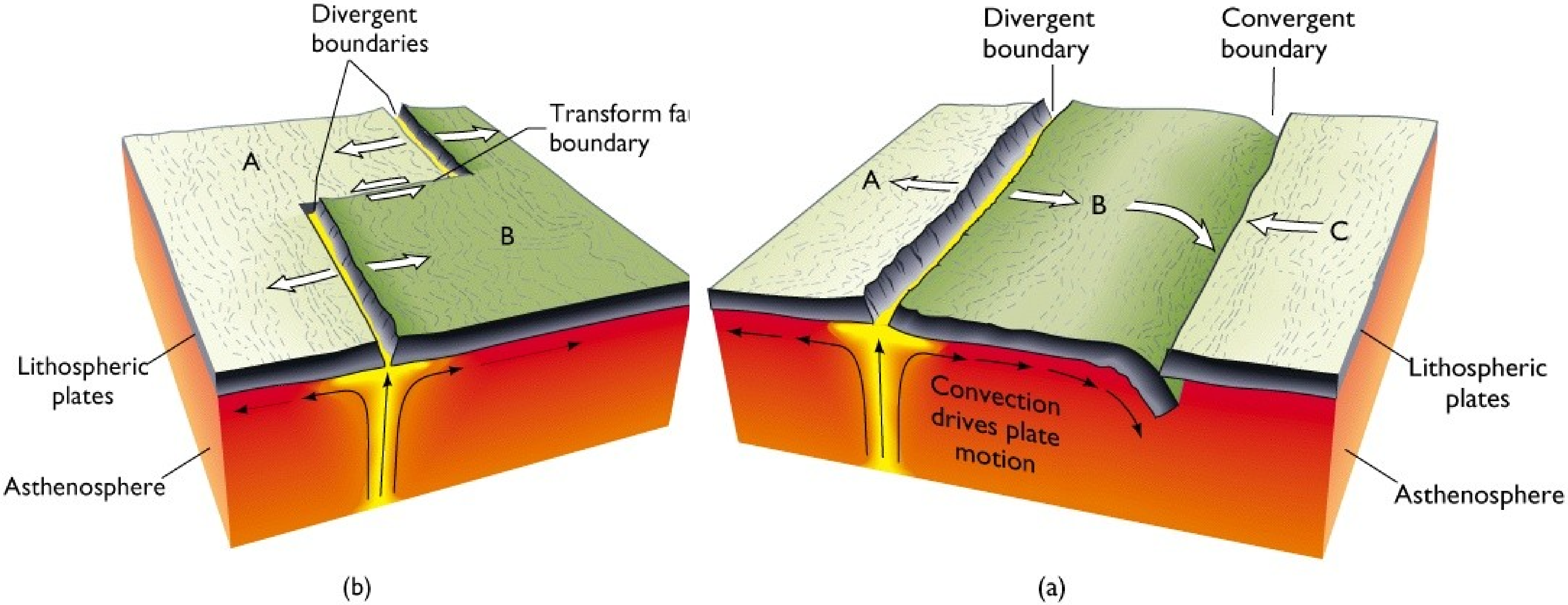
10 million years ago
Antarctica and Australia drift apart. Laurasia breaks up as the North Atlantic opens up, with North America moving away from Europe. The map of the world looks similar to the one we know today.

Convection Currents



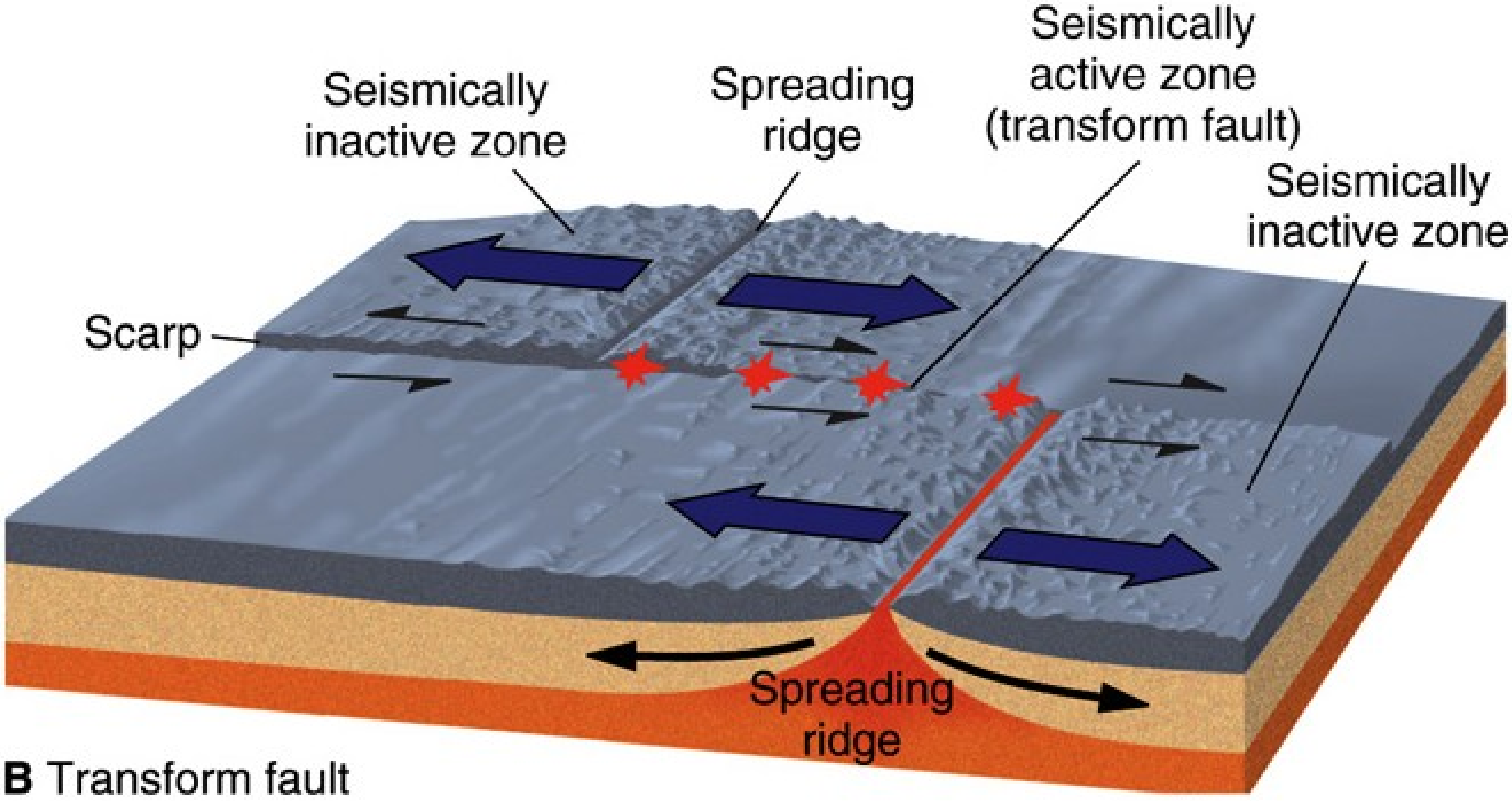
The force responsible for plate movement

Plate Boundaries



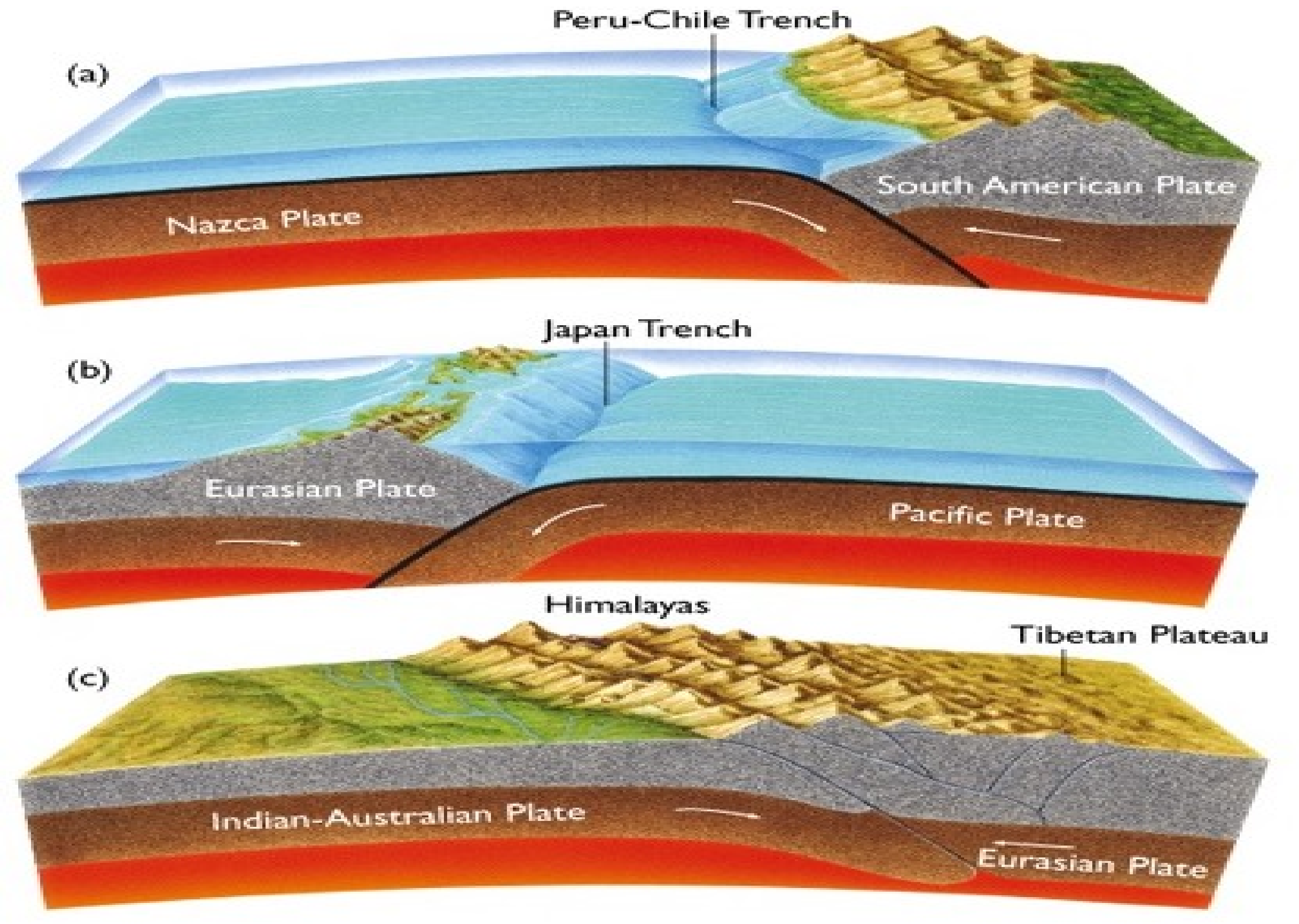
- 1.Convergent 2.Transform 3.Divergent

Transform Boundary

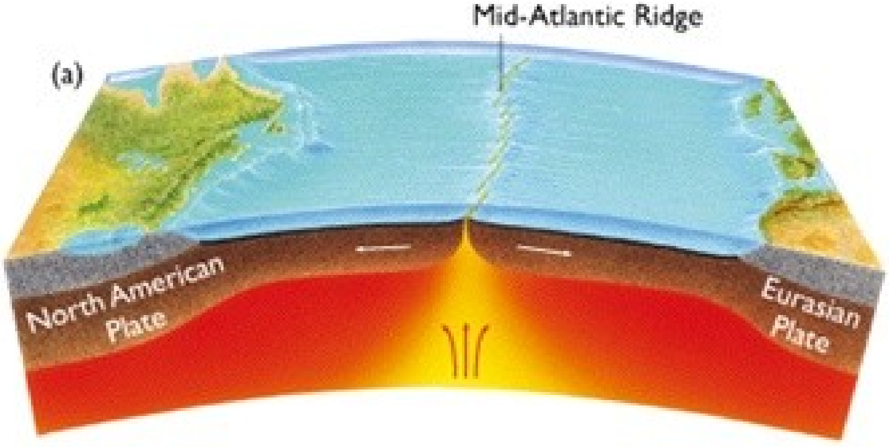

Seismically inactive zone
Spreading ridge
Seismically active zone (transform fault)
Seismically inactive zone
Scarp
Spreading ridge

B Transform fault

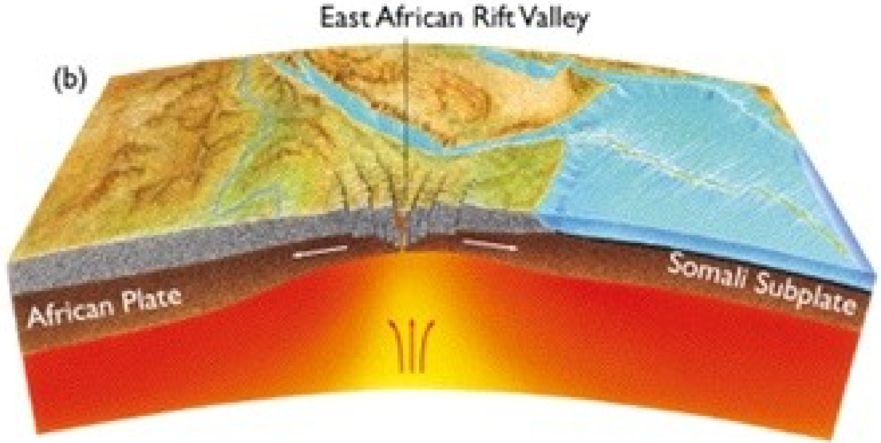
Convergent Boundaries



Divergent Boundaries



Seafloor Spreading

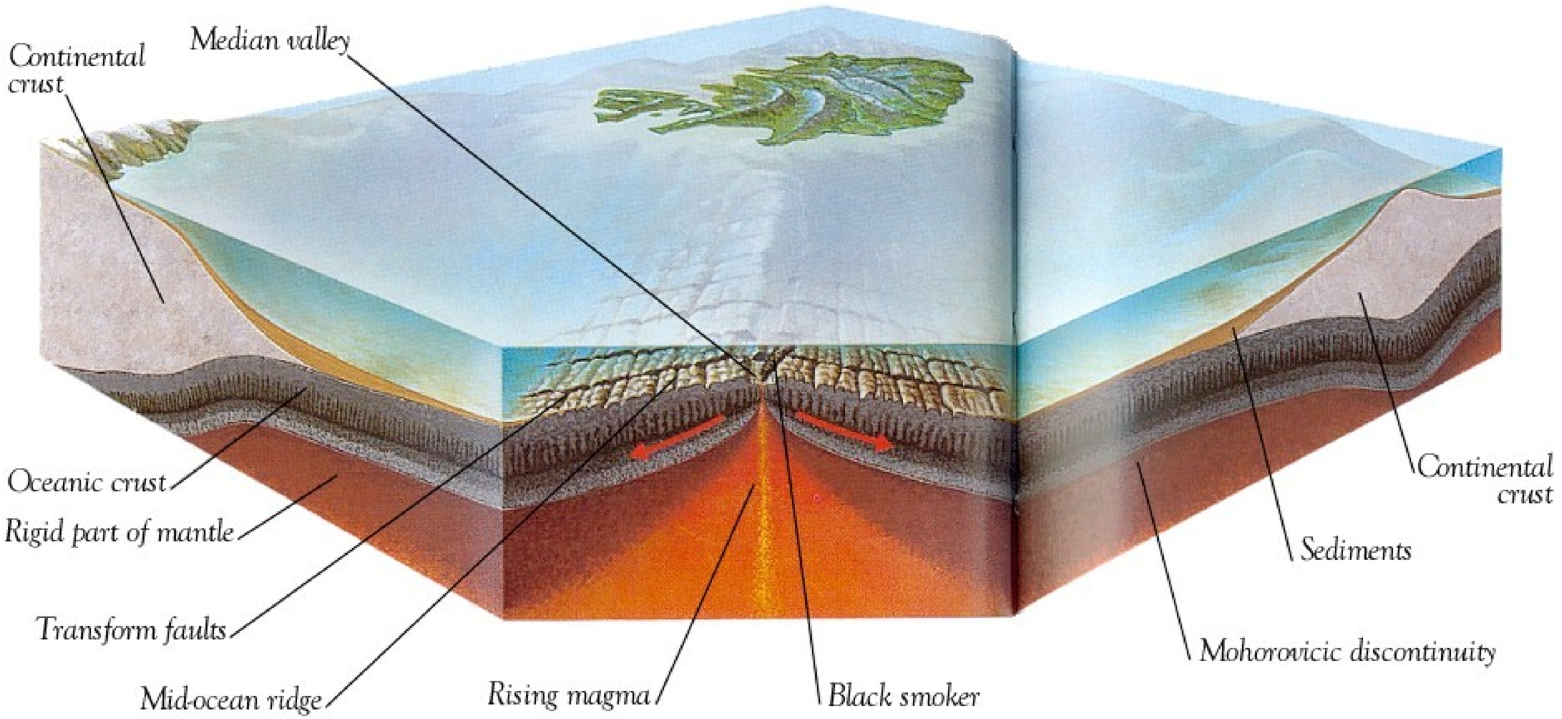


Continental Rift Zone

Seafloor Spreading

- results in the formation of new oceanic crust
- Happens along a mid-ocean ridge.
- Volcanism, but of non-explosive type!
- Small Earthquakes
- Mid-ocean ridges are rarely more than about1,500 m high, but they may snake along the ocean bed for thousands of miles

Seafloor Spreading



Iceland sits on top of the Mid-Atlantic Ridge

Continental Rift Zone

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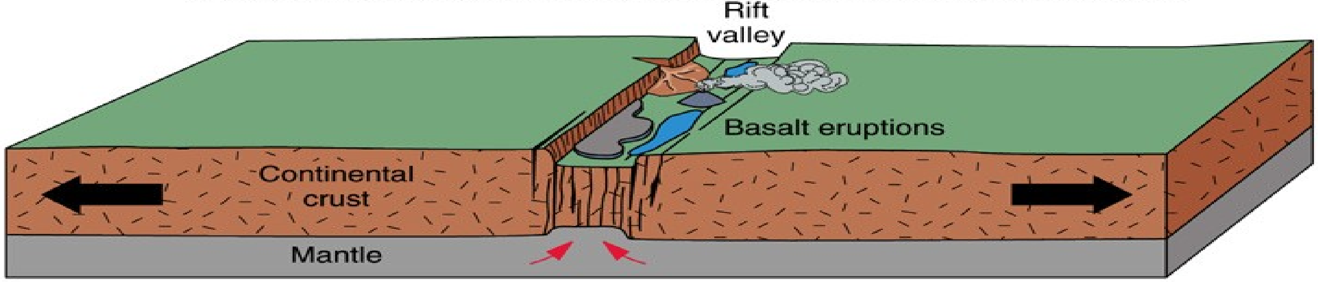
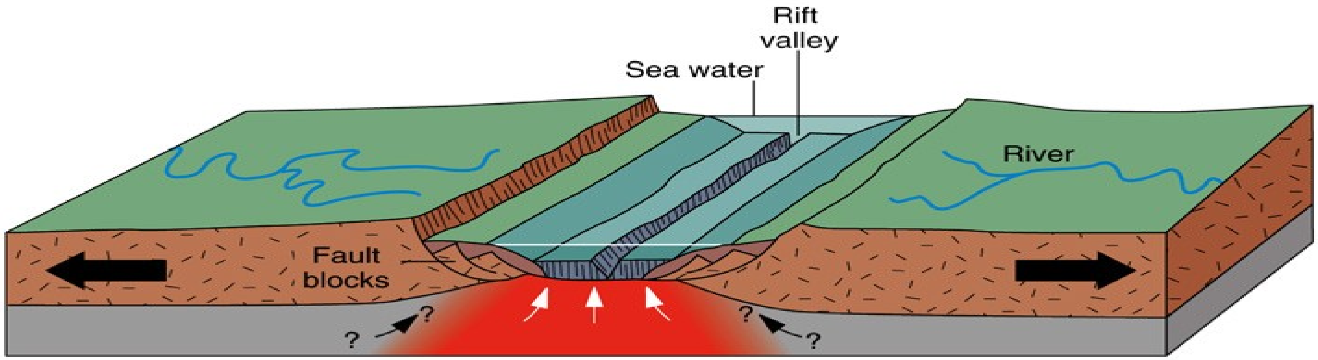
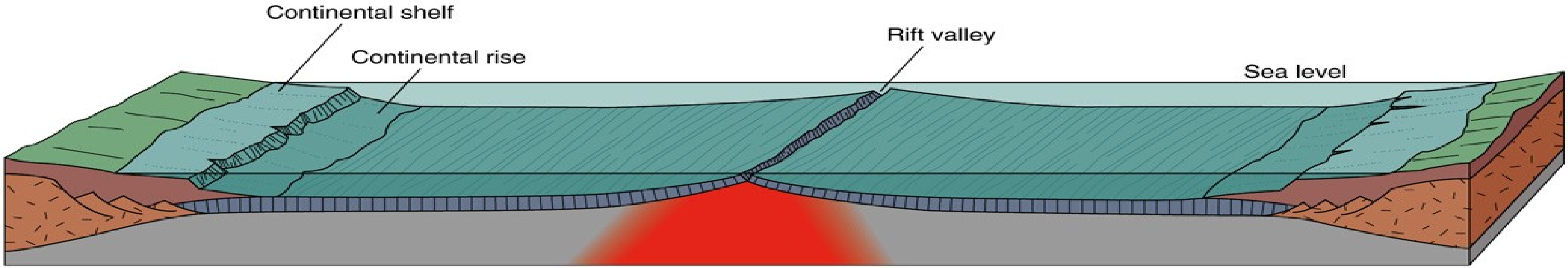


A Continent undergoes extension. The crust is thinned and a rift valley forms (East African Rift Valleys).

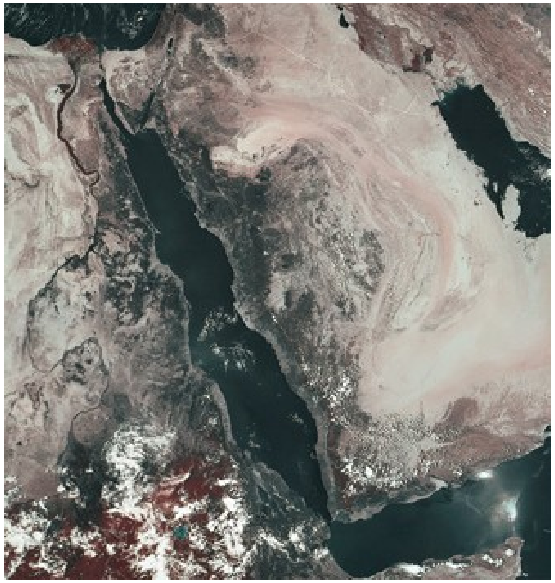


B Continent tears in two. Continent edges are faulted and uplifted. Basalt eruptions form oceanic crust (Red Sea).



C Continental sediments blanket the subsiding margins to form continental shelves and rises. The ocean widens and a mid-oceanic ridge develops (Atlantic Ocean).

Continental Rift Zone



- usually long
- Creates a Rift Valley
- Rifting can lead to rupture of the continental lithosphere and creation of new oceanic lithosphere
- alternatively, lead to formation of wide sedimentary basins around failed rift zones.

Continental Rift zone

DivergentBoundary.swf

THE END

Thank You